

blenderart

Crossing the Digital Divide!

Using 3d Printing for Stopmotions

Chicken on Steroids

Unmanned Vengeance

Coupe - Vadim Andreyev

blenderart

EDITOR - GauravNawani

MANAGER/EDITOR - SandraGilbert

WEBSITE - NamPham

DESIGN - GauravNawani

PROOFERS

Charlie Shene

Fade Shayol *

Scott Hill

Brian C. Treacy

Bruce Westfall

Daniel Hand

Daniel Mate

Henriël Veldtmann

Joshua Leung

Joshua Scotton

Kevin Braun

Mark Warren *

Noah Summers

Patrick O Donnell

Phillip Ryal

Wade Bick *

WRITERS

Albert Laine

David Stringham

Carl Endres

Krzysztof Bozalek

Sandra Gilbert

COVERART

Coupe - Vadim Andreyev

DISCLAIMER

Blenderart.org does not take any responsibility either expressed or implied for the material and its nature or accuracy of the information which is published in this PDF magazine. All the materials presented in this PDF magazine have been produced with the expressed permission of their respective authors/owners. Blenderart.org and the contributors disclaim all warranties, expressed or implied, including, but not limited to implied warranties of merchantability or fitness for a particular purpose. All images and materials present in this document are printed/re-printed with expressed permission from the authors and or writers. The contents responsibility lies completely with the contributing writer or the author of the article.

This PDF magazine is archived and available from the blenderart.org website. The blenderart magazine is made available under Creative Commons 'Attribution-NoDerivs 2.5' license.

COPYRIGHT© 2005-2012 'Blenderart Magazine', 'blenderart' and Blenderart logo are copyright of Gaurav Nawani. 'Izzy' and 'Izzy logo' are copyright Sandra Gilbert. All products and company names featured in the publication are trademark or registered trademarks of their respective owners.

EDITORIAL



Sandra Gilbert

Manager/Editor

Unlike traditional mediums, our art is generally stuck in our computer...

As artists, we have a unique vision of how things should look and even how to go about realizing those visions. And lucky for us, today's improvements in technology, tools and materials allow for an unlimited breadth of vision and realization.

While many have traditional art backgrounds and are just as happy working in traditional mediums, some of us, okay a lot of us, jumped straight into digital art as our medium of choice. And there is an amazing freedom in that choice as well as a few pitfalls. But concentrating on the positive side of life. Digital artists have a freedom to explore their visions in whatever creative manner they choose without worrying about securing and paying for

the needed materials, such as paint, clay, paper, pencils etc. Which means we can experiment indefinitely until we realize what we envisioned.

Pretty cool for us. One of the downsides, is that unlike traditional mediums, our art is generally stuck in our computer. Well it was until rather recently. These days your amazing creation can be printed out not only as a nice image, but as an actual 3d object. Now that is cool beans indeed.

But printing aside, there are other means of sharing your precious artwork. One favored medium of course is animations which can be shared on a variety of video sharing sites as well as be output to cd or dvd and even film. Game creators have only to send their files to others to share it with friends or even customers.

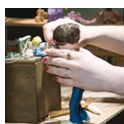
No matter what you create or how you choose to share that creation, there has never been a more exciting time to "Cross the Digital Divide". So cozy on up with our latest issue and read all about the various ways our community has been dreaming and creating in the digital world of art and how they have brought their creations across the Digital Divide into a new reality.

CONTENTS



Chicken on Steroids

4



3D Printing for Stopmotion

6



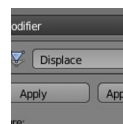
Interview: Bensimmon ds

10



Unmanned Vengeance

8



Displacement Modifier Tip.

9

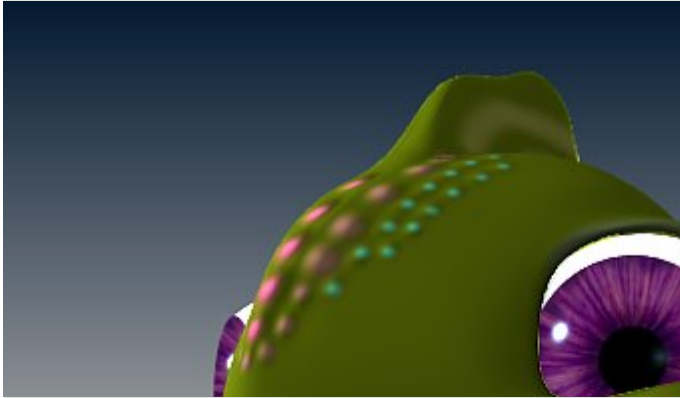
Making Of Trophy

IZZY SPEAKS

THE TRUTH AND NOTHING BUT THE TRUTH



IZZY SPEAKS: GREASE PENCIL - THE LITTLE TOOL THAT COULD



There are some tools in Blender that either you use constantly or not at all. The Grease Pencil seems to fall into this category.

When it was first introduced along about version 2.48, the main purpose seemed to be centered around animation, which was something I wasn't really into at the time. So I kind of ignored it and all the possible uses for it as well.

But then an odd thing happened. I noticed that Jonathan used it constantly during his Blender Cookie tutorials. Throughout any of his tutorials you can see him constantly drawing all over the screen to help explain what he is doing. Not only was he using it to highlight or draw attention to what he was explaining, he was also using it to show where he planned to create edge loops and major topology features on the model as he was working on it.

Hmm.... now that might be rather useful.

Then Bsurfaces arrived and lo and behold, the Grease Pencil allowed you to make short work of retopologizing a model. Okay, that is seriously useful. I am rather bad at retopology, so anything

that makes it even remotely easier is definitely helpful.

Come to find out, there are a great many uses for this unassuming little tool. In case you haven't explored the Grease Pencil here are a few ideas to get you started.

Oscar Baechler has a great blog post over on his blog, The Og Bog Blog, about using the Grease Pencil as an aid for composition.

- Onion skinning.
- Drawing arcs for animation and timing purposes.
- Bsurfaces (retopology).
- Grease Pencil strokes can be converted to actual geometry.
- Leave notes for yourself or others in your team.
- Educational aid to highlight or help explain.
- Sketching out concepts for later modeling.

And I'm sure there is quite a bit more as well. Looks like I need to dust off my graphic tablet and get drawing. :P ●

MAKING OF

EXPLORING BLENDERART AND BLENDERHEADS

CHICKEN ON STEROIDS

Albert Laine

Contributing Author

This idea came to me around 2008, when I heard that growth hormones are used in the U.S poultry industry. I started to contemplate on a tabletop sized statue of a bodybuilder chicken. A real life issue, in a vessel of an entertaining character. If you can give it a thought, that is.

When I saw the Finnish “From Bits to Atoms” call for entries at the end of 2011, I decided to enter the “Artistic and Entertaining” segment of the competition with this entertaining “Professional Fitness” character. The competition called digital artists to send their work to be machined / printed in physical format.

At the time I had to start designing the character, Blender did not have dynamic topology sculpting, at least as a stable feature to harness in a relatively demanding project. I started to visualize the character in Sculptris. Going through the internet with image searches, looking for photos of featherless chickens, my first design ended up to be a chicken with quite realistic proportions– alas, with ripped muscles! The result



was more in the realm of grotesque, and not light and funny.

It was time to find new directions. I opted for a more cartoony approach. After recalling a Ren & Stimpy episode called “Ren’s Pecks”, where the skinny chihuahua was “enhanced” with big pectoral muscles, I remembered “Earthworm Jim”, a worm in an athletic bodybuilder spacesuit. Searching again with these in mind, I started to find the character.

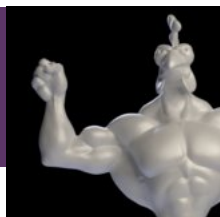
I worked in between Sculptris and Blender, cleaning artifacts etc. when needed. The “Pro-Fit” textual platform was made by designing the text in Inkscape, and then importing the SVG’s in to Blender, and extruding the depth. The front inset in the text was made with Blender’s boolean function.

When it was time to finally give pose to the chicken, I imported the “Pro-Fit” base/text in .obj format to Sculptris, and made the pose match the base by masking and rotating. Finally sculpting in final details



illustrating how the weight of the character is distributed, and affecting the feet. I wanted the pose to utilize a feature, that can only be made with computer assisted design: perfect mirror symmetry.

Sculptris can’t combine two separate meshes, so I had to export the finished chicken without the base, and



Chicken On Steroids

boolean them together inside Blender. With that amount of vertices, I had to leave the workstation to calculate the boolean function and go for a coffee break! Sadly, I had no time for a nice retopology, and making the piece hollow.

After all was good to go, I exported the mesh from Blender in .obj format to Netfabb Studio Basic.

Therein scaling to proper size and checking that the mesh is a one solid continuous surface. From Netfabb I exported a .stl file, within the specifications of the competition.

As per the rules of the competition, a valid entry required a previzualization render and a documentation of the workflow used. The Blender Cycles rendering engine was used with a simple but dramatic lighting setup. The documentation .pdf was made in Inkscape. I delivered the required material via email.

Later on I received an email stating that my entry was selected to the final competition, so it would be 3D printed and I would get to keep the sculpture. Yay! I went to the ceremony, where the final winners were to be announced, but our beloved bodybuilding chicken was seconded by a design vase. The piece was at the Sovolto exhibition room for the summer, and in the fall I exhibited it in Helsinki Art Forum 2012.

I learned a lot with this project. First of all, It's a good idea to make cartoony shapes with polygonal



modelling or nurbs, as sculpting parametric, smooth and curvy surfaces with a virtual brush is very time consuming. Secondly, it's a lot less hassle to make the whole thing from start to finish in one application. Blender's impressive toolset is now capable of doing a project such as this, and much more. Think about posing for example. It's easy to make a simple bone rig in Blender, and let Blender's automatic weighting do it's magic. Touching up with weight painting if needed. Posing with bones is a lot more intuitive, and above all reversible. Retopology is a no brainer. With tools like snapping to surface, shrinkwrap and Bsurfaces addon you can figure out a pretty nice workflow for yourself.

I just recently designed and sculpted a character, made a retopology for a realtime optimized mesh, baked a normal map from sculpted mesh, and rigged it for animation in one day inside Blender! I've made some commissioned work for 3D

printable objects, but I make a living with commercial 3D animation using Blender, and with some grants I receive. I've learned to love Blender more and more.

For me it's a great tool for artistic expression, but it also brings food to the table. Thank you Blender developers and the community! The gem of open source, that rivals (and in some cases beats) the highest end 3DC apps out there, Blender indeed is in the CG heavyweight league, and it does it with style! ●



MAKING OF

EXPLORING BLENDERART AND BLENDERHEADS



USING 3D PRINTING FOR STOP-MOTIONS

David Stringham

Contributing Author

This past year has marked my entry into 3D printing. In the fall of 2012, I became the operator of a MakerBot 3D printer at my college, Huntington University. My responsibilities include printing models from animation and 3D classes and performing maintenance. I also manage a NextEngine 3D Scanner.

I have completed more than a few projects during this time, but one in particular deserves special mention. One of the stop-motion animators, Cara Bolley, approached me about having miniature china balls built on the printer for her senior thesis, Curio. A china ball is a specific type of light modifier that is typically made out of paper and used in film to provide a soft, spherical light source. The reason for using 3D printing in this way was to take advantage of the high precision and repeatability offered by the technology.

I modeled the china balls in Blender using a UV sphere and removed the top edge loops. I then added a Solidify modifier to make the mesh watertight and add

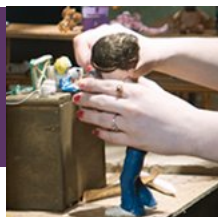


thickness. With the model finished, I exported the object as an .STL file for importing into MakerBot's Makerware software.

In MakerWare, I scaled the china ball object to the requested diameter of one inch. Next, I sliced the model and sent it to the MakerBot for printing. Each china ball was printed individually using semi-transparent PLA plastic. PLA was useful because of its ability to transmit light and also because it is resistant to warping, giving it a higher chance of success. My first attempts involved trying to print six instances at once; however, this resulted in a high failure rate as the extruder had to move between objects and would eventually bump into most of the objects and break them free of the build platform. Once the china balls had finished printing, they were hung around the top of the set.

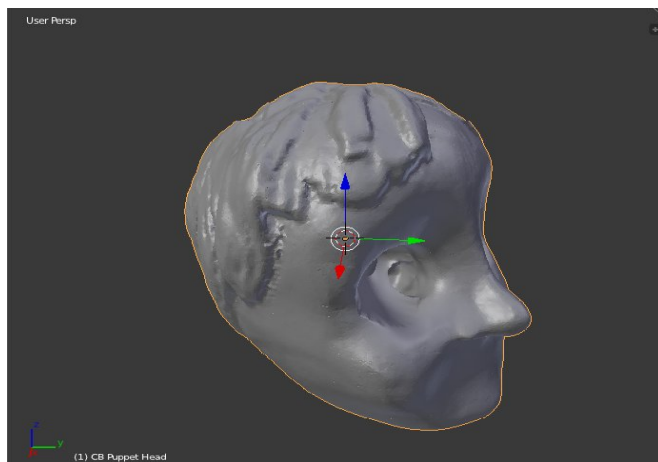
Another contribution to this project that I made was in printing a head. The puppet used in the film was sculpted in clay and then cast using foam latex for the body and polyurethane for the head. However, after the puppet was finished, Bolley and her professor decided that the head needed to be enlarged. Rather than go through the time-





Using 3D Printing for Stop-Motions

consuming process of re-sculpting and re-casting the head, they asked me to make a 3D print of the head.



After receiving the head, I set about to create the duplicate. The head was mounted and on the 3D scanning platform. This platform, the AutoDrive, made it simple to capture the puppet from all different sides by rotating on two axes, instead of a standard turntable rotation. I used NextEngine's ScanStudio HD software to scan the puppet and then align the scans and fuse them into one mesh.

I exported the model from ScanStudio as an OBJ file and brought it into Blender. I applied basic corrections to the mesh, including fixing holes in the empty eye sockets and hollowing out the hole for the neck, and applied a level of SubSurf to keep any facets from appearing. I then exported the model as an STL, similarly to the china balls.

One helpful feature that I did not have at the time was the 3D Print Toolkit. This makes it easy to identify common issues for 3D printing. Since it was released, I have made this add-on a regular part of my workflow and have found it highly useful.

My next step was to bring the model into netfabb Studio. Netfabb is an excellent free program for cleaning and repairing models, either automatically or by clicking on individual problem areas and repairing

them. This prevents getting non-manifold warnings and other errors.

Finally, I imported the model into MakerWare and scaled it to the dimensions that I had been given. Then it was a simple matter of setting the layer height to its lowest recommended value (0.1 mm) and enable supports to keep the overhanging parts of the model



from drooping. I chose to use black ABS plastic for the print simply because I had been using black, and thus it was convenient at the time. I did not use PLA, as it merges too strongly with the support section. Bolley later painted the head and added hair.

Looking back at the project, Bolley reflected that she may forego the polyurethane casting and begin the 3D scanning and printing process from the original clay sculpt. This is due partly to the increases in efficiency offered by the technology and partly in that Bolley is allergic to polyurethane. 3D printing would definitely be used for any film that requires lipsync or a lot of facial expressions as the replacement mouths.

I enjoyed working on this project as it was a good test of the workflow. More than that, however, I enjoyed the unique opportunity to apply 3D printing in this unique way and hope to promote this technology for use on other films in the future ●

MAKING OF

EXPLORING BLENDERART AND BLENDERHEADS



Carl Endres

Contributing Author

One day I decided to model a drone, then I thought... why not try and make it fly? After being pleased with how it looked in flight, I decided to take it a lot farther... a fun Blender based storyline emerged, and I made this short adventure /action video .

"Unmanned Vengeance" was made over the course of 6 weeks, I had a work in progress thread at Blenderartist.org forum that showed some of my progress as I was making the video. That can be found here:

Work In Progress thread on blenderartist forums.

All of the modeling, animation, lighting and rendering was done in Blender. The audio / video editing and compositing was done in a different program. I did use some other artists models from Blendswap, which are noted in the credits. It gave me time to focus more

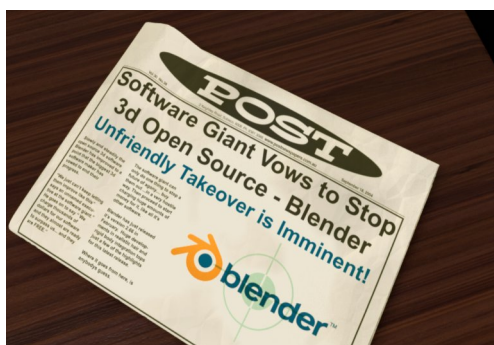
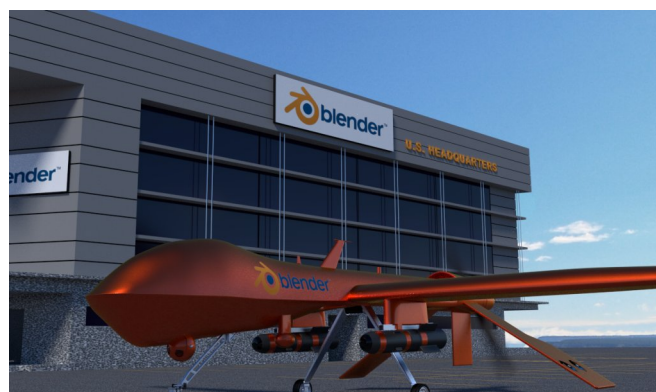


Fig 1. Storyline Beginnings.



Fig 1. Mission Objective





Unmanned Vengeance



on the storyline and animation aspects.

I hope you enjoy it, and be sure you don't miss the top secret ending after the credits ●

"Unmanned Vengeance"

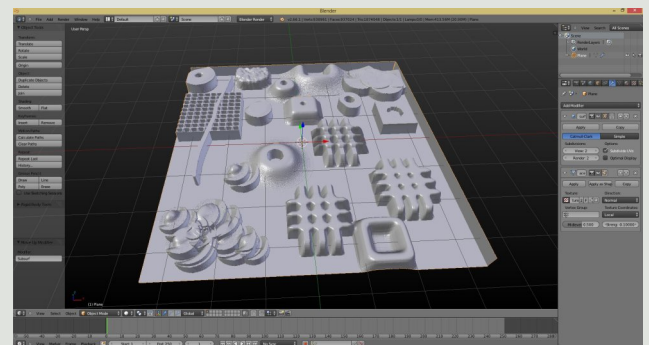
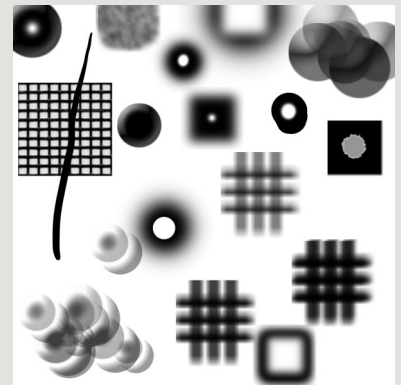
QUICK TIP: DISPLACEMENT MODIFIER

Krzysztof Bozalek

Contributing Author

I have seen couple different tutorials about texturing and displacement modifier.

I would like to share one nice trick. For the displacement modifier you can make a different displacement texture based on the color texture.



You can use for it different brushes. I gave you couple of examples, how sharp or blurred edge can effect the displacement ●

BLENDERHEAD

INSPIRATIONAL BLENDERNESS



BEN SIMMONDS

Ben thank you for taking the time to discuss your new book, *Blender Master Class* with us.

What prompted or inspired you to write Blender Master Class?

I had been writing tutorials and articles for my own website for a while, and potentially contemplating something bigger. When the people at No Starch asked if I'd like to write a book I jumped at the chance.

How did you end up choosing the three projects you used?

I wanted to be sure the book covered a good range of projects, so that each provided different challenges to discuss and illustrate different approaches when modeling, texturing and so on. For this reason I chose three projects. The bat creature makes use of organic modeling and sculpting techniques, as well as hair and fur, and subsurface scattering materials.

The robotic spider is a more hard-surfaced model, which required a different approach to modeling and sculpting, and was textured and shaded more procedurally. The third project, a ruined temple in the jungle provided different challenges again, this time composing a whole scene and mixing plants and scenery with architectural elements, lots of textures, using particle systems to create grass and lighting the scene realistically.

Did you need to do a lot of research prior to writing?

For the most part the book is a reflection of my usual work flow, so in that respect a lot of it flowed quite naturally, but there were definitely some technical areas where I wanted to be sure I was being accurate. Thomas Dinges, who did the technical review on the book was very helpful in this, for example in making sure I used the correct terms for UI elements. I also did a lot of "experiments" - creating small scenes to test out certain material and render settings for example, to make sure I could explain them well.

What did you find most challenging while writing Blender Master Class?

Probably trying to balance making the projects both interesting to look at and interesting to read about. There's a lot of repetitive work in creating art in any medium, and CG is no exception, particularly when creating a complex scene. On the other hand I didn't want reading about creating the projects to become repetitive, so I had to find a balance between making the projects complex enough that the final result would be interesting to look at, but not so big that explaining the process behind them would stop being interesting and educational.

What did you enjoy the most about writing Blender Master Class and would you do it again?

The most enjoyable thing is just getting to share my love for blender and hopefully helping others to get to know it better. I find that pretty rewarding. I am

INTERVIEW: Ben Simmonds

definitely going to continue writing about blender, but I think I'll be focusing on smaller tutorials and things for a little while.

Considering how fast Blender changes and grows, did you find it challenging to complete a book that wouldn't be dated before it was even printed?

Yes! It's amazing how fast the blender dev's keep adding new tools, and it certainly kept me on my toes at times, going back and revising parts of the book as new features were added. That said it's important to note that the overall principles don't change that much over time, and I tried to make the book about the reasoning behind my workflow as much as possible.

Do you use Blender for personal projects or just for work?

I'm pretty busy using it for work these days, but I occasionally find some time to use it for personal projects. Usually they end up on my website or the blender artists forums.

When you are not engaged in Blender activities, what do you do for fun?

I enjoy drawing, and I also do the occasional dance class. My girlfriend got me into it last year and it's a lot of fun. That and Minecraft. That's taken up far too many hours of my time.

What is your favorite activity in Blender?

Usually just messing around, I like seeing if I can find a new way to use a certain tool, or learn how to do something new with python. It's a great way to learn and keep up with new features. I also love sculpting.

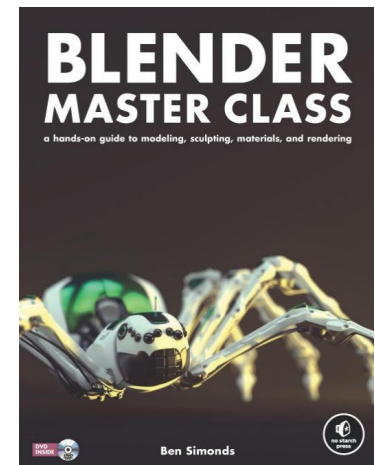
What inspires your artwork?

Primarily an interest in nature. I studied zoology at university and I'm fascinated by anatomy and how the natural world works. I love getting to grips with how

faces and bodies are constructed, how they move and express emotion. Creating art is a great way to explore that interest.

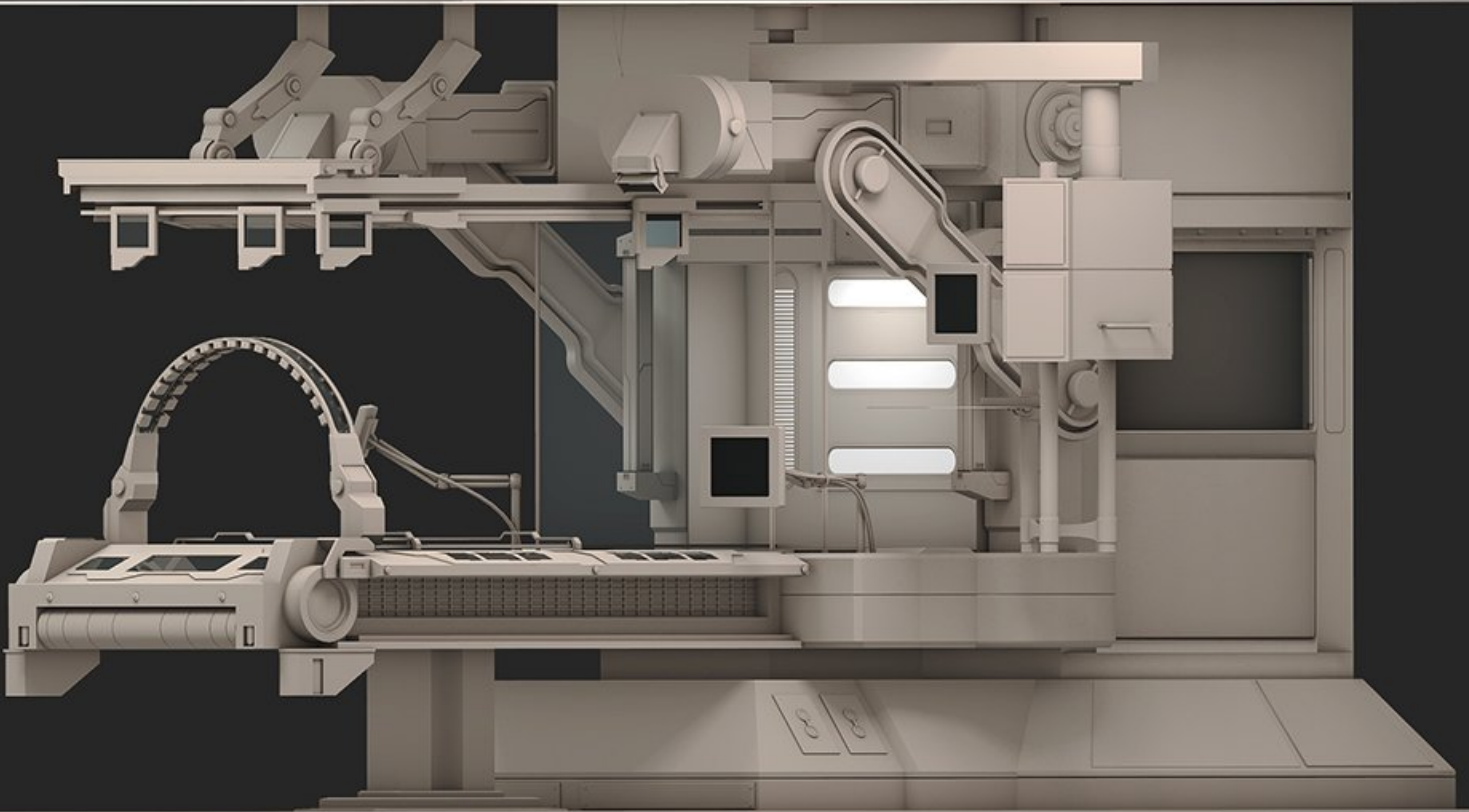
If you haven't gotten your copy of Ben's, Blender Master Class, I encourage you to do so. It is a wonderful book filled with excellent information on how to handle your projects and maximize your workflow to create stunning projects in a timely manner ●

Ben Simmonds.



GALLERIA

BLENDER ARTWORKS FROM THE BLENDERHEADS



Scanner - Benjamin Smith

GALLERIA

BLENDER ARTWORKS FROM THE BLENDERHEADS



Vadim Andreyev 2012

Coupe - Vadim Andreyev

GALLERIA

BLENDER ARTWORKS FROM THE BLENDERHEADS



Knight - Tyler Russo